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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,961	07/14/2003	Mario A. Perez	54477US024	6408
32692	7590	05/13/2005	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			STAIKOVICI, STEFAN	
			ART UNIT	PAPER NUMBER
			1732	

DATE MAILED: 05/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/618,961

Applicant(s)

PEREZ ET AL.

Examiner

Stefan Staicovici

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/17/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 5-13, 15-18 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Segawa *et al.* (US Patent No. 4,242,398).

Segawa *et al.* ('398) teach the claimed process of making a composite article including, providing a non-woven sheet (A) (see col. 3, lines 16-44) and a microfibrillated sheet (B) (see col. 6, lines 5-17), placing said microfibrillated sheet (B) against said non-woven sheet (A) in a mold, applying a monomer phenolic resin and molding said laminate under heat and pressure to polymerize said phenolic resin and form said composite article (see col. 18, lines 32-51).

Regarding claims 5-7, Segawa *et al.* ('398) teach that said fibers are coated with a fire-retardant material (see col. 8, lines 34-40) or a mold-release agent (see col. 8, line 67 through col. 9, line 4).

In regard to claims 8-9 and 13, Segawa *et al.* ('398) teach polypropylene fibers (see col. 7, line 43) and a polymerized phenolic (thermoset) resin (see col. 18, line 35).

Specifically regarding claim 10, Segawa *et al.* ('398) teach a non-woven sheet (B) (see col. 4, line 65 through col. 5, line 5).

Regarding claims 11 and 12, Segawa *et al.* ('398) teach a microfibrillated article having reinforcing fibers (see col. 9, lines 5-11). Further, Segawa *et al.* ('398) teach glass fibers (see col. 3, lines 25-30).

In regard to claims 15-18 and 20, Segawa *et al.* ('398) teach laminating a non-woven sheet (A) including glass fibers and a phenolic or polyolefin resin (see col. 3, lines 23-35 and 65-67) and a microfibrillated sheet (B) (see col. 6, lines 5-17). Further, Segawa *et al.* ('398) teach molding said laminate under heat and pressure to polymerize said phenolic resin and form said composite article (see col. 18, lines 32-51). Furthermore, Segawa *et al.* ('398) teach a microfibrillated article having reinforcing fibers (see col. 9, lines 5-11).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segawa *et al.* (US Patent No. 4,242,398) in view of Omori *et al.* (US Patent No. 3,954,928).

Segawa *et al.* ('398) teach the basic claimed process as described above.

Regarding claim 3, although Segawa *et al.* ('398) teach a microfibrillated article, Segawa *et al.* ('398) do not teach a draw ratio of 10:1. Omori *et al.* ('928) teach a polypropylene microfibrillated article having a draw ratio range of 8-80 (see Table 1). Therefore, it would have

been obvious for one of ordinary skill in the art to have used a drawing ratio of 8-80 as taught by Omori *et al.* ('928) to make a fibrillated article in the process of Segawa *et al.* ('398) because, Omori *et al.* ('928) specifically teach that such a draw ratio provides for an improved product by increasing the contact and entanglement area (see col. 7, lines 65-68) of the fibers.

In regard to claims 2 and 4, although Segawa *et al.* ('398) teach a microfibrillated article, Segawa *et al.* ('398) in view of Omori *et al.* ('928) do not teach specific properties of the fibers. However, it is noted that Segawa *et al.* ('398) in view of Omori *et al.* ('928) teach a polypropylene microfibrillated article having a draw ratio range of 8-80. Hence, because the same claimed invention is drawn to the same material and draw ratio as taught by the process of Segawa *et al.* ('398) in view of Omori *et al.* ('928), it is submitted that the fibers of the resulting microfibrillated article will also have the claimed properties of at least 275 MPa tensile strength and a surface area of at least 3 m<sup>2</sup>/g.

Specifically regarding claim 14, Segawa *et al.* ('398) does not teach a microfibrillated elastomeric article. Omori *et al.* ('928) teach the use of both thermoplastic and elastomeric polymers as equivalent alternatives (see col. 3, lines 30-42 and col. 9, lines 60-62). Therefore, it would have been obvious for one of ordinary skill in the art to have used an elastomeric polymer as taught by Omori *et al.* ('928) as an equivalent alternative to polypropylene in the process of Segawa *et al.* ('398) because, Omori *et al.* ('928) specifically teach the use of both thermoplastic and elastomeric polymers as equivalent alternatives.

5. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segawa *et al.* (US Patent No. 4,242,398) in view of Gallacher (US Patent No. 3,796,778).

Segawa *et al.* ('398) teach the basic claimed process as described above.

Regarding claims 19 and 20, although Segawa *et al.* ('398) teach compression molding of a microfibrillated article, Segawa *et al.* ('398) do not teach injection molding and extrusion coating of a microfibrillated article. Gallacher ('778) teaches molding, laminating and extrusion of a microfibrillated article (see col. 3, lines 41-70). Therefore, it would have been obvious for one of ordinary skill in the art to have injection molded or extrusion coated a microfibrillated article as taught by Gallacher ('778) in the process of Segawa *et al.* ('398) because, Gallacher ('778) teaches that such microfibrillated articles can be molded, laminated and extruded such that a wide variety of applications exist, thereby providing for an improved process that allows forming a wide variety of products for a wide variety of uses.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (571) 272-1208. The examiner can normally be reached on Monday-Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Colaianni, can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stefan Staicovici, PhD

  
5/9/05

Primary Examiner

AU 1732

May 9, 2005